

Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently Amended) A method of producing a constructed fares that includes an arbitrary added to a published fare, said method executed in a computer system having memory and a persistent storage device, the method comprising:

preprocessing by:

determining interior cities that appear with gateway cities in arbitraries for an airline, the arbitraries being published amounts and an order set of two cities that extend published fares that include an amount for travel between two cities to provide a bi-directional market ~~and which cannot be used alone to produce a fare~~; and

searching a database having published fares for gateway cities corresponding to the determined interior cities appearing in the arbitraries; and

producing the constructed fare, by:

applying an arbitrary corresponding to one of the interior cities to a published fare involving one of the gateway cities that corresponds to the determined interior cities appearing in the arbitraries to produce a constructed fare; and

storing the constructed fare in memory or the persistent storage device of the computer system for use in travel planning, faring and/or pricing.

2. (Previously Presented) The method of claim 1 wherein determining interior cities comprises:

accessing a hash table indexed by an airline, interior-city pair to return a list of gateway cities for which an airline has arbitraries that specify the interior city.

3. (Original) The method of claim 2 wherein accessing a hash table returns the list in constant time.

4. (Previously Presented) The method of claim 1 wherein searching for gateway cities comprises:

accessing a hash table indexed by an airline, gateway pair to return a list of gateway cities that an airline publishes fares from the determined gateway to another gateway city.

5. (Previously Presented) The method of claim 1 wherein determining interior cities comprises:

accessing a first hash table indexed by an airline, interior-city pair to return a list of gateway cities for which an airline has arbitraries that specify the interior city; and wherein searching for gateway cities further comprises:

accessing a second hash table indexed by an airline, gateway pair to return a second list of gateway cities that an airline publishes fares from the determined gateway to another gateway city.

6. (Original) The method of claim 5 wherein accessing the first and second hash table returns the lists in constant time.

7. (Original) The method of claim 1 wherein applying arbitraries further comprises:
evaluating records from fare construction tables to determine whether the constructed fare is a valid constructed fare.

8. (Currently Amended) The method of claim 1 wherein the method is conditioned to allow any one or more of an airline code, interior city, a first gateway city, a second gateway city, or fare-basis to vary.

9. (Original) The method of claim 7 wherein testing entries further comprises:
determining if an entry in a construction table was memoized before accessing the
construction table; and
if the entry was memoized, retrieving an answer from a store of memoized entries to
apply to the constructed fare.

10. (Original) The method of claim 1 wherein the constructed fare is a two component
constructed fare.

11. (Previously Presented) The method of claim 1, further comprising:
determining a second set of interior cities that appear with a second gateway city in the
published fare for the airline;
applying an arbitrary that extends the published fare to a city from the second set of
interior cities to produce a three component constructed fare.

12. (Currently Amended) The method of claim 1 wherein the method is performed over
all determined interior cities and all gateways cities that correspond to the determined interior
cities appearing in the arbitraries to produce plural constructed fares.

13. (Original) The method of claim 1 wherein the method is performed over all airlines.

14. (Currently Amended) A method of producing a set of constructed international fares
for a particular airline, the method executed in a computer system and the method comprising:
preprocessing by:

determining interior cities that appear with gateway cities in arbitraries for the particular
airline, arbitraries being published amounts and an ordered set of two cities that extend published
fares that include an amount for travel between two cities to provide a bi-directional market ~~and
which cannot be used alone to produce a fare;~~ and

searching a database for gateway cities corresponding to the determined interior cities appearing in the arbitraries; and

producing the constructed fares by:

applying arbitraries corresponding to the determined interior cities to published fares involving the gateway cities that corresponds to the determined interior cities appearing in the arbitraries to produce the set of constructed fares for the airline; and

~~tangibly~~ storing the constructed fares in memory or the persistent storage device of the computer system.

15. (Original) The method of claim 14 wherein the set of constructed fares are two component constructed fares.

16. (Original) The method of claim 14 further comprising:
determining a second set of interior cities that appear with second gateway cities in the published fares.

17. (Original) The method of claim 15 wherein the set of constructed fares is a first set of constructed fares and the method further comprises:

applying each arbitrary corresponding to each of the determined second set of interior cities to the first set of constructed fares to produce a second set of constructed fares.

18. (Previously Presented) The method of claim 17 wherein the first set of constructed fares are two component constructed fares and the second set of constructed fares are three component constructed fares.

19. (Original) The method of claim 14 further comprising:
evaluating entries in fare construction tables to determine whether constructed fares in the set of constructed fares are valid constructed fares; and

returning the valid constructed fares as the set of constructed fares.

20. (Original) The method of claim 19 wherein evaluating entries further comprises:
determining if an entry in a fare construction table was memoized before accessing the
fare construction table; and

if the entry was memoized, retrieving an answer from a store of memoized entries to
apply to the constructed fare.

21. (Original) The method of claim 14 wherein determining interior cities comprises:
accessing a first hash table by an airline, interior-city pair to return a list of gateway cities
for which an airline has arbitraries that specify the interior city; and

wherein searching for gateway cities comprises:
accessing a second hash table by an airline, gateway pair to return a second list of
gateway cities that an airline publishes fares from the determined gateway to another gateway
city.

22. (Currently Amended) A computer program product residing on a computer readable
medium, for producing constructed fares that includes an arbitrary added to a published fare,
comprising instructions for causing a computer system to:

preprocess data to determine interior cities that appear with gateway cities in arbitraries
for the airline, arbitraries being published amounts and an ordered set of two cities that extend
published fares that include an amount for travel between two cities to provide a bi-directional
market and which cannot be used alone to produce a fare;

search for gateway cities corresponding to the determined interior cities appearing in the
arbitraries;

produce the constructed fare by applying an arbitrary corresponding to one of the interior
cities to a published fare involving one of the gateway cities that corresponds to the determined
interior cities appearing in the arbitraries to produce the constructed fare; and

store the constructed fare in a ~~tangible~~ computer readable medium
~~in~~ a travel related activity.

23. (Original) The computer program product of claim 22 wherein instructions that cause a computer to determine interior cities comprises:

accessing a hash table by an airline, interior-city pair to return a list of gateway cities for which an airline has arbitraries that specify the interior city.

24. (Original) The computer program product of claim 23 wherein instructions that cause a computer to access a hash table returns the list in constant time.

25. (Original) The computer program product of claim 22 wherein instructions that cause a computer to search for gateway cities comprises instructions that cause a computer to:

access a hash table by an airline, gateway pair to return a list of gateway cities that an airline publishes fares from the determined gateway to another gateway city.

26. (Original) The computer program product of claim 22 wherein instructions that cause a computer to determine interior cities comprises instructions that cause a computer to:

access a first hash table by an airline, interior-city pair to return a list of gateway cities for which an airline has arbitraries that specify the interior city; and

wherein instructions that cause a computer to search for gateway cities comprises instructions that cause a computer to:

access a second hash table by an airline, gateway pair to return a second list of gateway cities that an airline publishes fares from the determined gateway to another gateway city.

27. (Original) The computer program product of claim 26 wherein instructions that cause a computer to access the first and second hash table returns the lists in constant time.

28. (Original) The computer program product of claim 22 wherein instructions that cause a computer to apply arbitraries further comprises instructions that cause a computer to:
test entries in construction tables to determine whether the constructed fare is a valid constructed fare.

29. (Original) The computer program product of claim 28 wherein instructions that cause a computer to test entries further comprises instructions that cause a computer to:
determine if an entry in a construction table was memoized before accessing the construction table; and
if the entry was memoized, retrieve an answer from a store of memoized entries to apply to the constructed fare.

30. (Original) The computer program product of claim 22 wherein the constructed fare is a two component constructed fare.

31. (Original) The computer program product of claim 22 wherein the computer program product is conditioned to allow any one or more of an airline code, interior city, a first gateway city, a second gateway city, or fare-basis to vary.

32. (Original) The computer program product of claim 22, further comprising instructions that cause a computer to:
determine a second set of interior cities that appear with a second gateway city in the published fare for the airline; and
apply a second interior city from the second set of interior cities to the constructed fare to produce a three component constructed fare.

33. (Original) The computer program product of claim 22 wherein the computer program product is executed over all determined interior cities and all gateways.

34. (Original) The computer program product of claim 22 wherein the computer program product is executed over all airlines.

35. (Currently Amended) A computer program product for producing a set of constructed international fares for an airline, the computer program product residing on a computer readable medium and comprising instructions that cause a computer to:

preprocess data by instructions to:

determine interior cities that appear with gateway cities in arbitraries for the airline, arbitraries being published amounts and an ordered set of two cities, that extend published fares that include an amount for travel between two cities to provide a bi-directional market ~~and which cannot be used alone to produce a fare~~;

search for gateway cities corresponding to the determined interior cities appearing in the arbitraries; and

produce fares by instructions to:

apply each arbitrary corresponding to each of the determined interior cities to published fares involving the gateway cities that corresponds to the determined interior cities appearing in the arbitraries to produce the set of constructed fares; and

~~tangibly~~ store the constructed fares to a computer memory or persistent storage ~~for use in~~ for use in a travel related activity.

36. (Original) The computer program product of claim 35 wherein the set of constructed fares are two component constructed fares.

37. (Original) The computer program product of claim 35 further comprising instructions that cause a computer to:

determine a second set of interior cities that appear with second gateway cities in the published fares.

38. (Original) The computer program product of claim 36 wherein the set of constructed fares is a first set of constructed fares, and the computer program product further comprises instructions that cause a computer to:

apply each arbitrary corresponding to each of the determined second set of interior cities to the first set of constructed fares to produce a second set of constructed fares.

39. The computer program product of claim ~~35~~ 39 wherein the first set of constructed fares are two component constructed fares and the second set of constructed fares are three component constructed fares.

40. (Original) The computer program product of claim 35 further comprising instructions that cause a computer to:

evaluate entries in fare construction tables to determine whether constructed fares in the set of constructed fares are valid constructed fares; and

return the valid constructed fares as the set of constructed fares.

41. (Original) The computer program product of claim 40 wherein instructions that cause a computer to evaluate entries further comprises instructions that cause a computer to:

determine if an entry in a fare construction table was memoized before accessing the fare construction table; and

if the entry was memoized, retrieve an answer from a store of memoized entries to apply to the constructed fare.

42. (Original) The computer program product of claim 35 wherein instructions that cause a computer to determine interior cities comprises instructions that cause a computer to:

access a first hash table by an airline, interior-city pair to return a list of gateway cities for which an airline has arbitraries that specify the interior city; and

wherein instructions that cause a computer to search for gateway cities comprises instructions that cause a computer to:

access a second hash table by an airline, gateway pair to return a second list of gateway cities that an airline publishes fares from the determined gateway to another gateway city.

43. (Currently Amended) A computer system comprising:
a processor;
a memory for storing instructions executed by the processor; and
a storage medium storing a computer program product for producing a set of constructed international fares for an airline, the computer program product comprising instructions that cause the processor to:
preprocess data by instructions to:
determine interior cities that appear with gateway cities in arbitraries for the airline, arbitraries being published amounts and an ordered set of two cities that extend published fares that include an amount for travel between two cities to provide a bi-directional market ~~and which cannot be used alone to produce a fare~~;
search for gateway cities corresponding to the determined interior cities appearing in the arbitraries; and
produce constructed fares by instructions to:
apply each arbitrary corresponding to each of the determined interior cities to published fares involving the gateway cities that corresponds to the determined interior cities appearing in the arbitraries to produce the set of constructed fares; and
~~tangibly~~ store the constructed fares in a computer memory or persistent storage ~~for use in~~ for use in a travel related activity.

44. (Original) The computer system of claim 43 wherein the system is a stand-alone computer.

45. (Original) The computer system of claim 43 wherein the system is a server computer in a networked, client-server computer system.

46. (Original) The computer system of claim 43 wherein the system is a client computer in a networked, client-server computer system.

Claims 47- 51 were canceled.

52. (Currently Amended) A method of producing a set of constructed international fares for an airline, the method executed in a computer system and the method comprising:

preprocessing by:

accessing a first hash table structure stored in computer memory by airline interior city pair to return a list of gateway cities for which an airline has arbitraries that specify the interior city, with arbitraries being published amounts and an ordered set of two cities that extend published fares to the gateway city from interior cities that include an amount for travel between two cities to provide a bi-directional market ~~and which cannot be used alone to produce a fare;~~

accessing a second hash table structure stored in computer memory by airline gateway pair to return a second list of gateway cities that an airline publishes fares from to determine a gateway to another gateway city;

producing constructed fares by:

applying the first arbitraries from the first hash table to the published fares from the second hash table to return a list of potential constructed fares;

determining whether a constructed fare in a list of constructed fares is a valid constructed fare and for valid ones of the potential constructed fares producing the constructed fares; and

~~tangibly~~ store the constructed fares in a computer memory or persistent storage ~~for use in~~ for use in a travel related activity.

53. (Previously Presented) The method of claim 52 wherein the constructed fares are two component constructed fares.

54. (Previously Presented) The method of claim 52 further comprising:
determining a second set of interior cities that appear as arbitraries with the second gateway cities by accessing a third hash table by airline interior city pair to return a list of gateway cities for which an airline has arbitraries that specify the interior city; and
applying the arbitraries corresponding to the determined second set of interior cities to the first set of constructed fares to produce a second set of constructed fares.

55. (Previously Presented) The method of claim 54 wherein the first set of constructed fares are two component constructed fares and the second set of constructed fares are three component constructed fares.